

**A NEW SPECIES OF TACHYTA KIRBY (COLEOPTERA:
CARABIDAE: BEMBIDIINI) FROM TROPICAL QUEENSLAND**

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Abstract

Tachyta rexensis sp. nov. is described from rainforest habitat in northern Queensland and is compared with the two species previously recorded (from open-forest habitats) in Australia.

Introduction

Tachyta Kirby is a worldwide genus of small, tachyine carabid beetles, mostly with subcortical habits. In his generic revision, Erwin (1975) recognised 19 species, of which only one, *T. brunnipennis* (Macleay, 1871), was listed from Australia. This evidently widespread species was recorded from localities in Queensland and the Northern Territory but was not known from overseas. Subsequently, Baehr (1986) described a second Australian species, *T. ovata* Baehr, that was sympatric with *T. brunnipennis* in the Northern Territory and the Ord River region of Western Australia.

During the course of a systematic survey of the Coleoptera associated with rainforest remnants in the Julatten area of northern Queensland, I collected specimens of a third Australian species of this genus, described below.

***Tachyta rexensis* sp. nov.**

(Figs 1-2)

Types. *Holotype* ♂, QUEENSLAND, Mowbray State Forest (western margin), Rex Range, East Julatten, 400 m, under bark of fallen rainforest tree-trunk, 26.vi.1993, B.P. Moore (Australian National Insect Collection [ANIC], Canberra). *Paratypes*: 3 ♂♂, 6 ♀♀, same data as holotype (B.P. Moore Collection, lodged with ANIC, Canberra). A female paratype will be presented to the Queensland Museum (Brisbane).

Description. Upperside mostly shining piceous; underside brownish; appendages clear rufous. Length 2.28-2.53 mm; maximum width 1.03-1.16 mm. Head of average width and convexity for genus, across eyes about as wide as pronotum between anterior angles, impunctate but with fine, slightly transverse microsculpture; antennae short but distinctly longer than in *T. ovata*, median segments clearly longer than wide. Pronotum impunctate, transverse, width/length about 1.7, base slightly wider than apex; sides lightly curved from apex almost to base, then slightly sinuate before posterior angles, the latter sharp; marginal channel narrow; prebasal impression and median line well marked, lateral carinae weak; surface impunctate, microsculpture faint. Elytra elongate-oval, convex, length/width about 1.35; sides slightly sinuate behind shoulders and near apex, widest behind middle; only the sutural striae complete, 3 others traceable on disc as rows of fine punctures but successively increasingly faint; discal setae within 4th intervals, adjacent to 4th striae, intervals impunctate, microsculpture very fine

fine and inconspicuous. Aedeagus (Fig. 2) similar to that of *T. ovata*; internal sac only slightly sclerotised; parameres 3-setose.

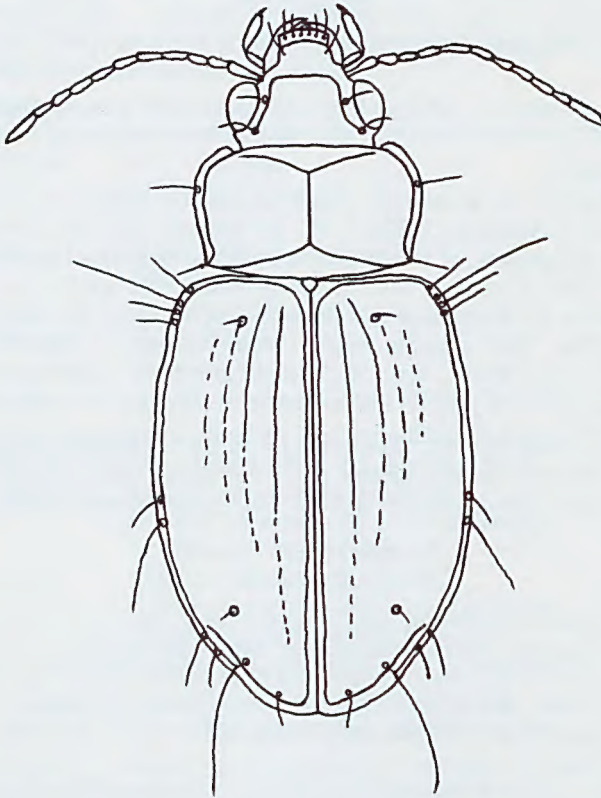


Fig. 1. *Tachyta rexensis* sp. nov., holotype male; natural length = 2.53 mm.

Comments. Together with the two other species known from Australia, this new species evidently belongs to the subgenus *Tachyta sensu stricto*, as restricted by Erwin (1975) to species with evident microsculpture; it differs from both *T. brunnipennis* (Macleay) (2 syntypes [ANIC] and 5 other specimens examined) and *T. ovata* Baehr (holotype and 2 paratypes [ANIC] examined) in its much less obvious sculpture, giving a more shining integument. The elytra in the new species are less elongate than in *T. brunnipennis* but slightly more so than in *T. ovata*. However, the antennae in *T. ovata* are markedly shorter than in the other two species. These differences may be expressed in the form of a revised key to the Australian species of *Tachyta*.

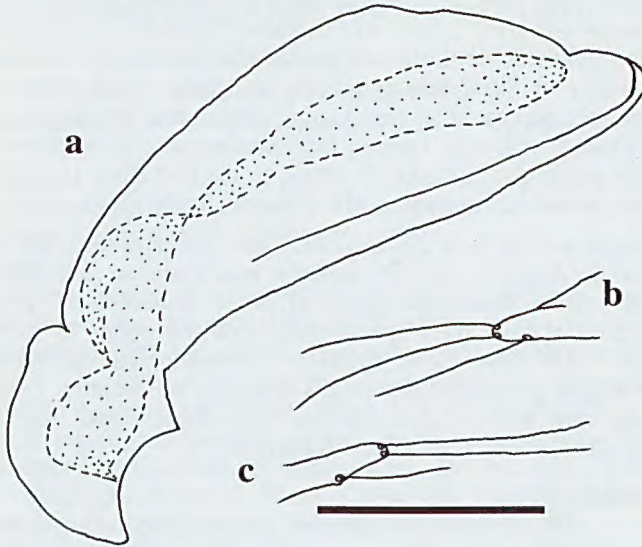


Fig. 2. *Tachyta rexensis* sp. nov., aedeagus: (a) median lobe in left lateral view, with parameres detached; (b) apex of right paramere; (c) apex of left paramere. Scale line = 0.1 mm.

Key to Australian species of *Tachyta*

- 1 Rather elongate species, ratio length/width of elytra over 1.4; surface of pronotum and elytra strongly punctate between microsculpture, integument rugose and dull *T. brunnipennis* (Macleay)
- Wider, convex species, ratio length/width of elytra 1.35 or less; surface of pronotum and elytra finely punctate or impunctate between microsculpture, integument scarcely or not rugose 2
- 2 Integument rather shining; antennae longer, the intermediate segments clearly longer than wide *T. rexensis* sp. nov.
- Integument rather dull; antennae shorter, the intermediate segments about as wide as long *T. ovata* Baehr

Discussion

Unlike its two Australian congeners, *T. rexensis* appears to be confined to rainforest, but all three species have been collected from beneath the bark of fallen timber. *T. rexensis* was discovered during an extensive survey of the Coleoptera of the Julatten area of tropical Queensland, being conducted by the present author. Apart from the type series (which was only a small proportion of the population present on the tree-trunk), other, single

specimens were taken from neighbouring but isolated patches of such forest. *T. brunnipennis* also featured in this survey but only as occasional records from the southwest of the Julatten area, where rainforest blends with more open *Acacia*- or *Eucalyptus*-dominated woodland. Thus, these two species are probably parapatric in this region, although *T. brunnipennis* shows a much wider distribution, ranging from southeastern Queensland, across the northern part of the Northern Territory, to the Ord River region of Western Australia, where it is sympatric with *T. ovata* (Baehr 1986).

As pointed out by both Erwin (1975) and Baehr (1986), the presence of *Tachyta* in Australia almost certainly represents an intrusion from the Oriental region, where the genus is richly represented. However, the existence of at least three species here probably points to more than one invasion. Of these three species, *T. brunnipennis* would appear on morphological grounds to represent a separate line, whereas *T. rexensis* and *T. ovata* may well be sister species that differentiated from a common ancestor after its arrival in tropical Australia.

References

- BAEHR, M. 1986. Review of the Australian species of genus *Tachyta* Kirby (Coleoptera, Carabidae, Bembidiinae). *Entomofauna Zeitschrift für Entomologie* 7(22): 305-314.
- ERWIN, T.L. 1975. Studies of the Subtribe Tachyina (Coleoptera: Carabidae: Bembidiini), Part III: Systematics, phylogeny, and zoogeography of the genus *Tachyta* Kirby. *Smithsonian Contributions to Zoology* 208: 1-68.